(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 23 December 2004 (23.12.2004)

PCT

(10) International Publication Number WO 2004/111730 A2

(51) International Patent Classification7:

G03F 7/00

(21) International Application Number:

PCT/JP2004/008508

(22) International Filing Date:

10 June 2004 (10.06.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 2003-169834

13 June 2003 (13.06.2003) JP

(71) Applicant (for all designated States except US): TOKYO OHKA KOGYO CO., LTD. [JP/JP]; 150, Nakamaruko, Nakahara-ku, Kawasaki-shi, Kanagawa, 211-0012 (JP).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): WASHIO, Yasushi [JP/JP]; c/o 150, Nakamaruko, Nakahara-ku,, Kawasaki-shi, Kanagawa, 211-0012 (JP). SAITO, Koji [JP/JP]; c/o 150, Nakamaruko, Nakahara-ku,, Kawasaki-shi, Kanagawa, 211-0012 (JP).
- (74) Agents: TANAI, Sumio et al.; 2-3-1, Yaesu, Chuo-ku,, Tokyo 104-8453 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

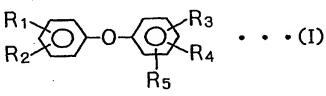
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DEVELOPER COMPOSITION FOR RESISTS AND METHOD FOR FORMATION OF RESIST PATTERN



(57) Abstract: To provide a developer composition for resists, capable of improving dimensional controllability of a resist pattern. The developer composition for resists comprises an organic quaternary ammonium base as a main component, said developer composition further comprising an anionic surfactant represented by the following general formula (I), and SO₄² the content of SO₄² being from 0.01 to 1% by mass. Formula (I). In the

R5

S0₄² being from 0.01 to 1% by mass. Formula (1). In the formula, at least one of R₁ and R₂ represents an alkyl or alkoxy group having 5 to 18 carbon atoms and the other one represents a hydrogen atom, or an alkyl or alkoxy group having 5 to 18 carbon atoms, and at least one of R₃, R₄ and R₅ represents an ammonium sulfonate group or a sulfonic acid-substituted ammonium group and the others represent a hydrogen atom, an ammonium sulfonate group or a sulfonic acid-substituted ammonium group.